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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/393,126	09/10/1999	ROBERTO AIELLO	FANT-99-002	2279
44279	7590	05/11/2005	EXAMINER	
PULSE-LINK, INC. 1969 KELLOGG AVENUE CARLSBAD, CA 92008			ABELSON, RONALD B	
			ART UNIT	PAPER NUMBER
			2666	

DATE MAILED: 05/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/393,126

Applicant(s)

AIELLO ET AL.

Examiner

Ronald Abelson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 December 2004 and 06 April 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 51-89 and 93-147 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 93-103, 106-140 and 144-147 is/are allowed.
- 6) ☒ Claim(s) 51, 67-89, 104, 105 and 141-143 is/are rejected.
- 7) ☒ Claim(s) 52-66 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 September 1999 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>4/6/2005</u> . | 6) <input type="checkbox"/> Other: _____ |

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Claim Objections

1. Claim 141 is objected to because of the following informalities: In line 9, "hand" must be changed to "band". Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

3. Claim 105 rejected under 35 U.S.C. 102(e) as being anticipated by Wellig (US 6,580,704).

Regarding claim 105, Wellig teaches a wireless communication network system (fig. 1) comprising at least three transceivers (fig. 1: AP, MT1, MT2), with each transceiver including a Medium Access Control protocol (fig. 1, 10, col. 7 lines 10-16, col. 9 lines 37-44) having a time division multiple access frame definition (time slot, col. 9 lines 37-44), each said transceiver having a transmitter and receiver (fig. 1: see two way communication between each device), one of said transceivers being structured and configured as a master device (fig. 1 device AP, col. 2 lines 56-59), said master device structured and configured to manage data transmission between said master device and said at least two other transceivers (AP keeps a mapping table, DM communication setup request, col. 7 line 60 - col. 8 line 3 : note, the connection request is sent from the MT to the AP) and direct data transmission between said at least two other transceivers (col. 7 lines 17-19), wherein said transceivers are structured and configured to transfer data to other transceivers isochronously (AP grants up/down link slots for MTs, col. 9 lines 59-62).

In this claim, the limitation of "an ultra-wideband wireless communication network system" was not given any weight

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by the examiner. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary.

Applicant is advised of the obligation under 37 CFR 1.56 to

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point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claim 51 rejected under 35 U.S.C. 103(a) as being unpatentable over Wellig in view of Akerberg (US 6,483,826), and further in view of Magee (US 6,002,687).

Regarding claim 51, Wellig teaches a wireless communication network system (fig. 1) comprising at least three transceivers, each transceiver having a transmitter and a receiver (fig. 1: AP, MT1, MT2), one of said transceivers being structured and configured as a master device (fig. 1 device AP, col. 2 lines 56-59), and master device structured and configured to manage data transmission between said transceivers (AP keeps a mapping table, DM communication setup request, col. 7 line 60 - col. 8 line 3 : note, the connection request is sent from the MT to the AP) and direct data transmission between said at least two other transceivers (col. 7 lines 17-19), and operating according to the Medium Access Control 'MAC' protocol (fig. 1, 10, col. 7 lines 10-16, col. 9 lines 37-44).

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Although Wellig teaches MAC, the reference is silent on the MAC hardware interface comprising a multiplexer / demultiplexer unit and a slot allocation unit, the multiplexer / demultiplexer unit operatively coupled to the slot allocation unit.

Akerberg teaches a multiplexer / demultiplexer unit (fig. 9 box 9-22) and a slot allocation unit (fig. 9 box 9-16, put in the correct frame and carrier timeslot, col. 12 lines 24-26), the multiplexer / demultiplexer unit operatively coupled to the slot allocation unit.

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of Wellig by incorporating within each transceiver a device(s) to perform framer and slot synchronization and mux/demux functions as taught by Akerberg. This would improve the system by providing a means for performing slot allocation and multiplexing the data before transmission.

Although Akerberg teaches a slot allocation unit, the reference is silent on a plurality of slot allocation units.

Like the application, Magee teaches a plurality of identical devices in connected in parallel (fig. 8 box 100-1, 100-2).

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of the combination of

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Wellig and Akerberg by installing a backup framer and slot allocation unit connected in parallel with the current unit (Akerberg: fig. 9-16). This would improve the system by providing for backup in case the primary unit fails.

In this claim, the limitation of "an ultra-wideband wireless communication network system" was not given any weight by the examiner. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951).

7. Claim 104 rejected under 35 U.S.C. 103(a) as being unpatentable over Wellig in view of Barrett (US 5,610,907).

Regarding claim 104, Wellig teaches a wireless communication network system (fig. 1) comprising at least three transceivers (fig. 1: AP, MT1, MT2), with each transceiver including a Medium Access Control protocol (fig. 1, 10, col. 7 lines 10-16, col. 9 lines 37-44) having a time division multiple access frame definition (time slot, col. 9 lines 37-44), each

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said transceiver having a transmitter and receiver (fig. 1: see two way communication between each device), one of said transceivers being structured and configured as a master device (fig. 1 device AP, col. 2 lines 56-59), said master device structured and configured to manage data transmission between said master device and said at least two other transceivers (AP keeps a mapping table, DM communication setup request, col. 7 line 60 - col. 8 line 3 : note, the connection request is sent from the MT to the AP) and direct data transmission between said at least two other transceivers (col. 7 lines 17-19).

Both Wellig and Barrett teach a WLAN environment (Barrett: col. 11 line 8); furthermore, Barrett teaches the transmitters are structured and configured to emit radio frequency pulses operating with ultra-wide band technology and said receivers structured and configured to receive said radio pulses (col. 11 lines 61-67, col. 12 lines 11-32, col. 1 lines 17-21).

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of the combination of Wellig and Barrett by modifying the transceivers in the devices (fig. 1: AP, MT1, MT2) to operate in an ultra wideband environment. This modification can be performed according to the teachings of Barrett (col. 11 lines 61-67, col. 12 lines 11-32).

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This would improve the system by enabling extremely high data rate wireless communications (Barrett: col. 1 lines 36-40).

8. Claim 143 rejected under 35 U.S.C. 103(a) as being unpatentable over Wellig in view of Haartsen (US 6,574,266).

Wellig teaches a wireless communication network system (fig. 1) comprising at least three transceivers, each transceiver having a transmitter and a receiver (fig. 1: AP, MT1, MT2), one of said transceivers being structured and configured as a master device (fig. 1 device AP, col. 2 lines 56-59), said master device structured and configured to manage data transmission between said master device and said at least two other transceivers (AP keeps a mapping table, DM communication setup request, col. 7 line 60 - col. 8 line 3 : note, the connection request is sent from the MT to the AP) and direct data transmission between said at least two other transceivers (col. 7 lines 17-19), at least two other transceivers being structured and configured as slave devices (col. 2 lines 56-59), wherein said transceivers are structured and configured to transfer data to other transceivers isochronously (col. 9 lines 59-62).

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Wellig is silent on each slave device further comprises a local clock therein, said master device comprising a master clock therein, each said local clock synchronized with said master clock.

Both the Wellig and Haartsen references pertain to a master transceiver and a plurality of slave transceivers in a WLAN environment. Haartsen teaches each slave device further comprises a local clock therein, said master device comprising a master clock therein, each said local clock synchronized with said master clock (col. 11 lines 10-13).

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of Wellig having the clocks in the mobile terminals (fig. 1: MT1, MT2) synchronized to the clock in the access point (fig. 1: AP). Having the AP periodically broadcast its time and having the mobile terminals calibrate their clocks according to the broadcasted time can accomplish this. This would improve the system by having the mobile terminals synchronized with the AP.

In this claim, the limitation of "an ultra-wideband wireless communication network system" was not given any weight by the examiner. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body

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of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951).

9. Claims 141 and 142 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wellig, Haartsen, and further in view of Barrett.

Regarding claim 141, Wellig teaches a wireless communication network system (fig. 1) comprising at least three transceivers, each transceiver having a transmitter and a receiver (fig. 1: AP, MT1, MT2), one of said transceivers being structured and configured as a master device (fig. 1 device AP, col. 2 lines 56-59), said master device structured and configured to manage data transmission between said master device and said at least two other transceivers (AP keeps a mapping table, DM communication setup request, col. 7 line 60 - col. 8 line 3 : note, the connection request is sent from the MT to the AP) and direct data transmission between said at least two other transceivers (col. 7 lines 17-19), at least two other transceivers being structured and configured as slave devices (col. 2 lines 56-59).

Wellig is silent on each slave device further comprises a local clock therein, said master device comprising a master clock therein, each said local clock synchronized with said master clock.

Both the Wellig and Haartsen references pertain to a master transceiver and a plurality of slave transceivers in a WLAN environment. Haartsen teaches each slave device further comprises a local clock therein, said master device comprising a master clock therein, each said local clock synchronized with said master clock (col. 11 lines 10-13).

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of Wellig having the clocks in the mobile terminals (fig. 1: MT1, MT2) synchronized to the clock in the access point (fig. 1: AP). Having the AP periodically broadcast its time and having the mobile terminals calibrate their clocks according to the broadcasted time can accomplish this. This would improve the system by having the mobile terminals synchronized with the AP.

The combination is silent on the transmitters are structured and configured to emit radio frequency pulses operating with ultra-wide band technology and said receivers structured and configured to receive said radio pulses.

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Both Wellig and Barrett teach a WLAN environment (Barrett: col. 11 line 8); furthermore, Barrett teaches the transmitters are structured and configured to emit radio frequency pulses operating with ultra-wide band technology and said receivers structured and configured to receive said radio pulses (col. 11 lines 61-67, col. 12 lines 11-32, col. 1 lines 17-21).

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of the combination of Wellig and Haartsen by modifying the transceivers in the devices (fig. 1: AP, MT1, MT2) to operate in an ultra wideband environment. This modification can be performed according to the teachings of Barrett (col. 11 lines 61-67, col. 12 lines 11-32). This would improve the system by enabling extremely high data rate wireless communications (Barrett: col. 1 lines 36-40).

Regarding claim 142, wherein said transceivers are structured and configured to transfer data to other transceivers isochronously (Wellig: col. 9 lines 59-62).

10. Claims 67, 68, 70, 71, 73, 88, 89 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of

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Wellig, Akerberg, and Magee as applied to claim 51, 51, 51, 51, 51, 73,, 73 above, and further in view of Barrett.

Regarding claims 67, 70, 88, the combination is silent on the transmitters are structured and configured to emit radio frequency pulses operating with baseband / ultra-wide band wireless technology and said receivers structured and configured to receive said radio pulses.

Both Wellig and Barrett teach a WLAN environment (Barrett: col. 11 line 8); furthermore, Barrett teaches the transmitters are structured and configured to emit radio frequency pulses operating with ultra-wide band technology and said receivers structured and configured to receive said radio pulses (col. 11 lines 61-67, col. 12 lines 11-32, col. 1 lines 17-21).

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of the combination of Wellig and Haartsen by modifying the transceivers in the devices (fig. 1: AP, MT1, MT2) to operate in an ultra wideband environment. This modification can be performed according to the teachings of Barrett (col. 11 lines 61-67, col. 12 lines 11-32). This would improve the system by enabling extremely high data rate wireless communications (Barrett: col. 1 lines 36-40).

Regarding claims 68, 71, 73, 89, wherein said transceivers are structured and configured to transfer data to other transceivers isochronously (Wellig: AP grants up/down link slots for MTs, col. 9 lines 59-62).

11. Claims 69, 72, 74, 75 rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Wellig, Akerberg as applied to claim 68, 71, 73, 51 above, Magee and Barrett, and further in view of Haartsen.

The combination is silent on each slave device further comprises a local clock therein, said master device comprising a master clock therein, each said local clock synchronized with said master clock.

Both the Wellig and Haartsen references pertain to a master transceiver and a plurality of slave transceivers in a WLAN environment. Haartsen teaches each slave device further comprises a local clock therein, said master device comprising a master clock therein, each said local clock synchronized with said master clock (col. 11 lines 10-13).

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of the combination by having the clocks in the mobile terminals (Wellig: fig. 1: MT1, MT2) synchronized to the clock in the access point (Wellig: fig.

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1: AP). Having the AP periodically broadcast its time and having the mobile terminals calibrate their clocks according to the broadcasted time can accomplish this. This would improve the system by having the mobile terminals synchronized with the AP.

Allowable Subject Matter

12. Claims 93-103, 106-140, and 144-147 allowed.

13. Claim 52-66 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding claim 93 nothing in the prior art of the record teaches or fairly suggests a MAC unit including a Physical layer interface, a multiplexer/demultiplexer unit operatively coupled to the Physical layer interface, a plurality of slot allocation units operatively coupled to the multiplexer/demultiplexer, an interface to higher level protocols operatively coupled to said plurality of slot allocation units, in combination with all the limitations listed in the claim.

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Regarding claims 106, 110, 113, 118, 121, 128, 130, 133, 144-147 nothing in the prior art of the record teaches or fairly suggests each transceiver comprises a framing controller, said framing controller having means for generating and maintaining time frame information for the network system, in combination with all the limitations listed in the claim.

Regarding claims 52, 135, 136, 138, 139, nothing in the prior art of the record teaches or fairly suggests the transceivers operate according to a MAC protocol structured and configured to operate in aloha mode and TDMA mode, said system further comprising a frame definition having a master slot, a command slot, and a plurality of data slots, in combination with all the limitations listed in the claim.

Regarding claim 60, nothing in the prior art of the record teaches or fairly suggests a frame definition having a master slot, a command slot, and a plurality of data slots, said master having a master sync code, a protocol operating in slotted aloha mode and time division multiple access mode, said master device managing said protocol and said data slots in said protocol.

Response to Arguments

14. Applicant's arguments with respect to claims 51,67-89,104,105 and 141-143 have been considered but are moot in view of the new ground(s) of rejection.

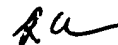
Conclusion

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ronald Abelson whose telephone number is (571) 272-3165. The examiner can normally be reached on M-F.

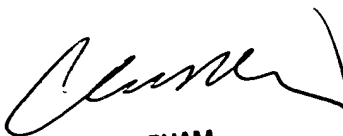
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema Rao can be reached on (571) 272-3174. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Ronald Abelson
Examiner
Art Unit 2666



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